Communicable Disease BULLETIN
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Surveillance for Sexually Transmitted Diseases Among New Hampshire Teenagers

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Sexually transmitted diseases (STDs), once called venereal diseases, are among the most common infectious diseases in the United States (US) today. More than 20 STDs have now been identified with an annual cost of care in the US estimated to be well in excess of 10 billion dollars.[2] Approximately 15.3 million new cases of STDs occur annually in this country, at least one-quarter of them among teenagers. Despite the fact that a great deal of progress has been made in STD prevention over the past four decades, the rates of STDs are 50 to 100 times higher in the US than in other industrialized nations.[3]

STDs are almost always transmitted from person to person by sexual intercourse. These infections are most efficiently transmitted by vaginal or anal intercourse, and generally less efficiently by oral sexual activity. The causative organisms of STDs may be bacterial or viral. Viral infections, such as Hepatitis B, Hepatitis C, and Human Immunodeficiency Virus (HIV) are also transmitted through the use and sharing of contaminated needles among injecting drug users. STDs can affect men and women of all racial backgrounds and economic levels. The diseases may cause no symptoms in men or women, especially in women. Furthermore, complications as a result of an STD tend to be more frequent and severe in women. Most bacterial STDs are curable with single dose therapy.

The most commonly reported bacterial STDs in the US are chlamydia and gonorrhea. Chlamydia has steadily increased and in 1998, the Centers for Disease Control and Prevention (CDC) reported the highest chlamydial infection rate since the disease first became nationally notifiable in 1995.[1] Chlamydial infection rate revealed an increase from 196.8 cases per 100,000 persons in 1997 to 236.5 cases per 100,000 persons in 1998. Similarly, an increase of nearly 9% in the national infection rate for gonorrhea infection was observed in 1998 at 132.8 per 100,000 persons (from 121.4 cases per 100,000 persons in 1997). One cause for the increasing rates may be true increases in morbidity. However, it should also be noted that improved surveillance systems, better diagnostic testing and expansive screening efforts are possible reasons for this trend.

Adolescents and young adults in the 15-24 age group represent the highest incidence of STDs. Some of the reasons for the increased incidence include that adolescents may be more likely to have multiple sex partners, may be more likely to engage in unprotected sexual activity, and their partners may be at a higher risk of being infected with an STD. Despite the significant health and economic burden of STDs, the scope and impact of the epidemic are underestimated and generally excluded from public discussion. In the US, public awareness and knowledge regarding STDs is insufficient and some

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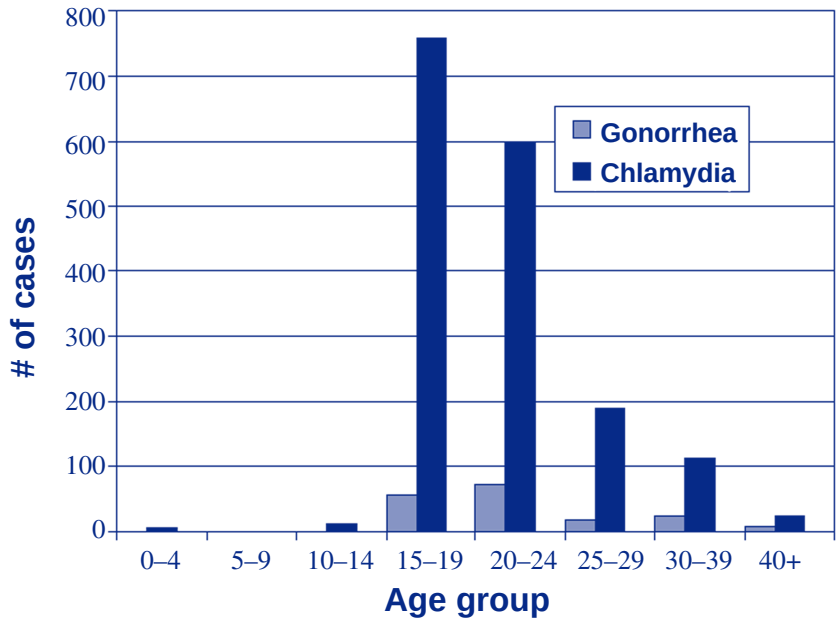

Figure 1. *Reported chlamydia and gonorrhea cases by age group, 1998–1999*. *Data includes through to 9/30/99.*

Surveillance for Meningococcal Disease Among College Students in New Hampshire, 1995 – 1999

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Neisseria meningitidis remains an important cause of bacterial meningitis and invasive infection in the United States[1-2], as well as in New Hampshire.[3] Few infectious diseases cause as much concern among members of the public and health care profession. The illness is characterized by the rapid onset of disease and despite aggressive treatment takes a fulminant course in 10-15% of those infected.

One area of recent concern surrounds whether college and university students should receive vaccine. On October 29,1999, the National Advisory Committee on Immunization Practices (ACIP) issued a statement addressing some of these concerns.[4] In order to provide New Hampshire health care practitioners with additional information, this article provides meningococcal surveillance information from the New Hampshire reportable disease database for the period of 1995-1999. The New Hampshire reportable disease database is a legislatively authorized database consisting of reports of certain infectious diseases of public health significance. Reports are received from health care practitioners, laboratories, and hospitals.

A total of 82 meningococcal disease cases of all ages were identified through the New Hampshire surveillance system from January 1, 1995 to December 31, 1999, for an average annual incidence of 1.4 cases per 100,000 persons. Twenty six of those cases (32%) occurred in 1995. Seventy eight (95%) of those cases met criteria for a confirmed case (i.e. laboratory isolation of the organism). The median age of illness was 17.5 years, however important differences exist by age group. The incidence was high in children under 5 years (16 cases, rate = 4.4/100,000 persons) and persons over 65 years of age (12 cases, rate = 1.7/100,000 persons), but the highest rates occurred in the group of 15 to 19 years old (23 cases, rate = 5.8/100,000 persons), as shown in the accompanying figure. Of these cases 7 (30%) were reported to be attending college at the time that disease started. In the group 20 to 24 yeas old, an additional 4 cases were in college at the time of disease, for a total of 11 students identified during this time period.

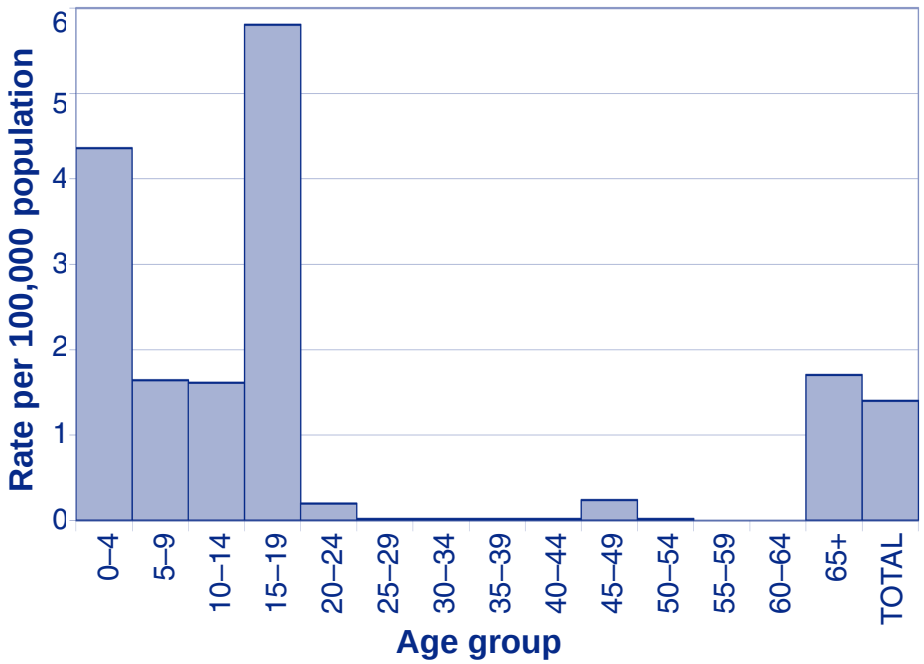

Figure 2. *Rates of Meningococcal Disease in New Hampshire, by 5 years age grouping. 1995–1999.*

Focusing on these eleven students who attended college, their median age was 19 years, and 46% of cases were females. Six (55%) cases occurred in 1995. 80% of cases were reported as white race, 10% (1 case) was Asian and the remaining case did not have race information available. Clinically, bacteremia was reported in 8 cases (73%) and meningitis in 5 cases (45%). In this group, one death was reported for a case fatality rate of 9%.

Ten cases (91%) were positive by culture and met CDC standardized case definitions for a confirmed case.[5] One case remained classified as probable. *Neisseria meningitidis* serogroup B accounted for 4 (36%) of the cases, serogroup C for 5 cases (45%) and serogroup Y for 1 case (10%) of

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total cases. The organism was isolated from blood in 10 cases (91%) and from cerebrospinal fluid in 2 cases (18%). Four cases (36%) were reported in winter months.

Information about grade at college or more detailed environmental information was not available. The literature shows that the number of meningococcal outbreaks among college students have been increasing in the past few years[2], but recent reports indicate that the incidence of meningococcal infection in undergraduate 4 years college students (1.74 cases pre 100.000 persons) is similar to the incidence in the general population of the same age (1.44 cases per 100.000 persons). However, those students residing in a dormitory setting on campus showed a risk 3.4 times higher than off-campus residents (0.96 cases/100,000 persons versus 3.24 cases/100,000 persons). [6]

Attempting to address this situation, in September 1997 the American College Health Association recommended that "college health services take a more proactive role in alerting students and their parents about the dangers of meningococcal disease" and suggested that college students consider vaccination against meningococcal disease.[7] On October 20,1999 the Advisory Committee on Immunizations practices (ACIP) modified its previous position[8] toward recommending that medical care providers of college students provide information to students and their parents about meningococcal disease and the possible benefits of vaccination; in addition, they recommended that vaccination be made easily available to freshmen students.[4]

Current commercial vaccines available in the United States include a quadrivalent product containing polysaccharides of serogroups A, C, Y and W135. The antibody responses to each of the four polysaccharides are serogroup specific and independent.[9] Clinical efficacy for serogroups A and C varies around 90% in adults and measurable levels of antibodies against group A and C decrease markedly during the first three years following a single dose of vaccine.[9] Vaccine against serogroup B is not currently available in the United States, and this is still and important cause of cases in this country and particularly in New Hampshire.

Because of the seriousness of meningococcal disease and the importance of ensuring prophylaxis in household, day care and other close contacts, it is important to report immediately to the New Hampshire Department of Health and Human Services all suspected cases of meningococcal disease. Health providers may report or receive consultation by calling 1-800-271-4496 extension 4496 or (603) 271-4496; during weekends you can call 1-800-852-3345, extension 5300 or 271-5300 and ask for the Public Health Nurse on call.

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HIV Testing and TB

The New Hampshire Tuberculosis Advisory Committee is a voluntary group of New Hampshire physicians, health providers, and public health professionals who meets regularly to help guide Tuberculosis policy in our state. At a recent meeting, it voted unanimously to adopt HIV testing of all patients diagnosed with active tuberculosis (TB) disease as the standard of care. The Centers for Disease Control (CDC) estimate that 10 to 15 percent of all TB cases and nearly 30 percent of cases among people ages 25-44 occur in HIV infected individuals.[1] Mounting evidence suggests that active TB accelerates the natural progression of HIV infection.[2] In addition, studies indicate that HIV risk assessments don't necessarily reflect true risk. CDC surveillance data shows that as of December 31, 1998, 15% of all AIDS cases and 39% of all HIV cases were initially reported without risk factors.[3] Since these diseases share serious interactive consequences, including mortality, the decision was made to promote HIV testing so as to maximize treatment outcomes and prognosis for both diseases.

Note

HIV testing can be arranged through private providers or statewide testing centers. For additional information, call the TB Program at 1-800-852-3345 ext. 4469 or the HIV Program at ext. 4502.

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STD prevention efforts for adolescents and young adults are controversial. An added concern is the high rate of STDs among adolescents and young adults suggesting an added susceptibility for these young people for HIV transmission.

STDs among New Hampshire Teenagers

In New Hampshire, STDs which are reportable to the Department of Health and Human Services include; gonorrhea, syphilis, chlamydia, pelvic inflammatory disease (PID), mucopurulent cervicitis (MPC), non-gonococcal urethritis (NGU), and acquired immunodeficiency syndrome (AIDS). HIV infection is reportable without names. Although New Hampshire is a low incidence state, trends in STD incidence among young persons parallel national trends. The most commonly reported bacterial STDs in New Hampshire are chlamydia and gonorrhea. Adolescents and young adults 15-24 years of age have historically and continue to account for approximately half of all reported STDs in New Hampshire. The exceptions to this trend among STDs are syphilis, HIV infection and AIDS. To date, syphilis infections occur primarily in latent stages in persons over 20 years of age and persons 30-39 years of age account for nearly half of all reported cases of HIV infection and AIDS.

Since 1996, reported cases of chlamydia have steadily increased. Chlamydial infection rate increased from 66.2 reported cases per 100,000 persons in 1996 to 86.7 reported cases per 100,000 persons in 1998. Although gonorrhea incidence overall is lower in comparison to chlamydia (8.1 reported cases per 100,000 persons in 1998), a concerning trend has emerged in recent years. Adolescents and young adults 15-24 years of age have increasingly represented the highest percentage of reported cases, accounting for about one third of reported cases from 1995 to 1997. As compared to earlier years, where generally lower case rates existed for gonorrhea (7.2 reported cases per 100,000 persons in 1993) and less than half (45%) of the reported cases were in this age group.

Most recently this trend has continued and intensified among reported cases of gonorrhea and chlamydia. In 1998 and into 1999, there have been 179 reported cases of gonorrhea, of those 72% (n=128) have occurred among persons 15-24 years of age. Similarly, of the 1,696 reported cases of chlamydia in the same time period, 80% (n=1,353) were among persons 15-24 years of age (Figure 1). Possible reasons for these increases are similar to those discussed earlier, however it is clear that prevention efforts must be targeted to reducing risk behaviors among young persons and the resultant high incidence of STDs.

Note

Information on STD/HIV clinics and locations may be obtained by calling the Bureau of STD/HIV Prevention at 1-800-228-0254. STD reports may be called to 1-800-852-3345 ext. 4490 or 271-4490 and HIV/AIDS disease reports may be called to 1-800-228-0254 ext. 3932 or 271-3932.

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